WHAT IS CLAIMED IS:

1. An image processing apparatus characterized by comprising:

image processing means for sensing object images from different directions, extracting feature points from the sensed object images, and computing a feature pattern on the basis of the extracted feature points.

2. An apparatus according to claim 1, comprising:

a plurality of image sensing means for sensing object images from different directions; and

normalization means for extracting feature points from the object images sensed by said plurality of image sensing means, setting a feature region on the basis of the extracted feature points, segmenting the set feature region into a plurality of regions, computing predetermined information in each segmented region, and computing a feature pattern on the basis of the computed predetermined information.

3. An apparatus according to claim 1, comprising:

a plurality of image sensing means for sensing object images from different directions;

normalization means for extracting feature points from the object images sensed by said plurality of image sensing means, setting a feature region on the basis of the extracted feature points, segmenting the set feature region into a plurality of regions, computing an average value of brightness levels in each

segmented region, and computing a feature pattern on the basis of the computed average value;

registration means for registering the feature pattern computed by said normalization means as a feature pattern associated with a predetermined object; and

verification means for specifying an object associated with the object image by comparing the feature pattern computed by said normalization means with the feature pattern registered in said registration means.

4. An apparatus according to claim 3, wherein said plurality of image sensing means line up vertically, and

said normalization means computes the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object image, and a feature point group including central points of right and left pupils of the object image.

5. An apparatus according to claim 3, wherein said plurality of image sensing means line up horizontally, and

said normalization means computes the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object

image, a feature point group including central points of right and left pupils and a central point of a left nasal cavity of the object image, and a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image.

6. An apparatus according to claim 3, wherein said plurality of image sensing means line up vertically and horizontally, and

said normalization means computes the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object image, a feature point group including central points of right and left pupils and a central point of a left nasal cavity of the object image, a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image, and a feature point group including central points of right and left pupils of the object image.

7. An apparatus according to claim 3, wherein said normalization means extracts feature vectors of different dimensions from respective object images sensed by said plurality of image sensing means, and arranges the extracted feature vectors of different dimensions in turn to integrate them as a multi-dimensional feature pattern.

8. An apparatus according to claim 3, wherein said normalization means captures object images sensed by said plurality of image sensing means at predetermined time intervals, computes feature patterns

5 of the object images of identical times, and arranges feature patterns of different times in turn to integrate them as a time-series feature pattern.

9. An apparatus according to claim 1, comprising: image input means for sensing an object image from

10 different positions, and inputting a plurality of object images at different image sensing positions;

feature extraction means for extracting feature patterns that represent features of an object from the plurality of object images input by said image input

15 means;

verification means for verifying the plurality of feature patterns extracted by said feature extraction means with a reference feature pattern which is registered in advance; and

20 discrimination means for, when at least one of the plurality of feature patterns extracted by said feature extraction means matches the reference feature pattern which is registered in advance as a result of verification of said verification means, determining

25 that an object associated with that object image is a person himself or herself.

10. An apparatus according to claim 9, wherein

said image input means has a plurality of image sensing

means which are set in advance at a plurality of

predetermined positions, and sense an object image from

a plurality of different positions, and inputs a

5   plurality of object images at different image sensing

positions using said plurality of image sensing means.

11.   An apparatus according to claim 9, wherein

said feature extraction means comprises:

feature point detection means for detecting

10   feature points of an object from the input object

image;

feature region setting means for setting a feature

region on the basis of the feature points detected by

said feature point detection means;

15   region segmentation means for segmenting the

feature region set by said feature region setting means

into a plurality of regions; and

feature pattern extraction means for computing

brightness average values in the regions segmented by

20   said region segmentation means, and extracting a

feature pattern which represents a feature of the

object on the basis of the brightness average values.

12.   An apparatus according to claim 1, comprising:

image input means for sensing an object image from

25   different positions, and inputting a plurality of

object images at different image sensing positions;

input image determination means for determining an

image sensing position of an object image to be used

from the plurality of object images input by said image

input means upon registration of a feature pattern;

first feature extraction means for extracting a

5 feature pattern which represents a feature of an object

from the object image determined by said input image

determination means;

registration means for registering the feature

pattern extracted by said first feature extraction

10 means as a reference feature pattern associated with

the object in correspondence with position information

indicating the image sensing position of the

corresponding object image;

verification image selection means for selecting

15 an object image at an image sensing position, which

corresponds to the position information registered

together with the feature pattern of the object to be

verified registered in said registration means, of the

plurality of object images input by said image input

20 means upon verification of a feature pattern;

second feature extraction means for extracting a

feature pattern which represents a feature of the

object from the object image selected by said

verification image selection means; and

25 verification means for specifying an object

associated with the object image by verifying the

feature pattern extracted by said second feature

extraction means with the feature pattern of the object
to be verified registered in said registration means.

13. An apparatus according to claim 1, wherein an
object image is input at different image sensing
5   positions by moving at least one image sensing means to
a plurality of predetermined positions and sensing an
object image at respective positions.

14. An apparatus according to claim 1, comprising:
a plurality of image sensing means, respectively
10   set in advance at a plurality of predetermined
positions, for sensing an object image from a plurality
of different positions;

determination means for determining a position of
the image sensing means to be used of said plurality of
15   image sensing means upon registration of a feature
pattern;

first feature extraction means for extracting a
feature pattern which represents a feature of an object
from the object image obtained by the image sensing
20   means determined by said determination means;

registration means for registering the feature
pattern extracted by said first feature extraction
means as a reference feature pattern associated with
the object in correspondence with position information
25   indicating the position of the image sensing means
determined by said determination means;

selection means for selecting the image sensing

means at a position, which corresponds to the position
information registered together with the feature
pattern of the object in said registration means, of
said plurality of image sensing means upon verification

5   of a feature pattern;

second feature extraction means for extracting a
feature pattern which represents a feature of the
object from the object image obtained by the image
sensing means selected by said selection means; and

10   verification means for specifying an object
associated with the object image by verifying the
feature pattern extracted by said second feature
extraction means with the feature pattern of the object
registered in said registration means.

15   15. An apparatus according to claim 14, wherein
each of said first and second feature extraction means
comprises:

feature point detection means for detecting
feature points of an object from the input object

20   image;

feature region setting means for setting a feature
region on the basis of the feature points detected by
said feature point detection means;

region segmentation means for segmenting the

25   feature region set by said feature region setting means
into a plurality of regions; and

feature pattern extraction means for computing

brightness average values in the regions segmented by
said region segmentation means, and extracting a
feature pattern which represents a feature of the
object on the basis of the brightness average values.

5   16.   An image processing method comprising:
the step of sensing object images from different
directions, extracting feature points from the sensed
object images, and computing a feature pattern on the
basis of the extracted feature points.

10   17.   A method according to claim 16, comprising:
the first step of sensing object images from
different directions; and
the second step of extracting feature points from
the object images sensed in the first step, setting a

15   feature region on the basis of the extracted feature
points, segmenting the set feature region into a
plurality of regions, computing predetermined
information in each segmented region, and computing a
feature pattern on the basis of the computed

20   predetermined information.

18.   A method according to claim 16, comprising:
the first step of sensing object images from
different directions;
the second step of extracting feature points from

25   the object images sensed in the first step, setting a
feature region on the basis of the extracted feature
points, segmenting the set feature region into a

plurality of regions, computing an average value of brightness levels in each segmented region, and computing a feature pattern on the basis of the computed average value;

5   the third step of registering the feature pattern computed in the second step as a feature pattern associated with a predetermined object; and

the fourth step of specifying an object associated with the object image by comparing the feature pattern 10   computed in the second step with the feature pattern registered in the third step.

19. A method according to claim 18, wherein the first step includes the step of sensing object images from different directions which line up vertically, and

15   the second step includes the step of computing the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object image, and a feature point group including 20   central points of right and left pupils of the object image.

20. A method according to claim 18, wherein the first step includes the step of sensing object images from different directions which line up horizontally, 25   and

the second step includes the step of computing the feature pattern using one of a feature point group

including central points of right and left pupils and central points of right and left nasal cavities of the object image, a feature point group including central points of right and left pupils and a central point of a left nasal cavity of the object image, and a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image.

21. A method according to claim 18, wherein the first step includes the step of simultaneously sensing object images from directions different in vertical and horizontal directions, and

the second step includes the step of computing the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object image, a feature point group including central points of right and left pupils and a central point of a left nasal cavity of the object image, a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image, and a feature point group including central points of right and left pupils of the object image.

22. A method according to claim 18, wherein the second step includes the step of extracting feature vectors of different dimensions from respective object

images sensed in the first step, and arranging the
extracted feature vectors of different dimensions in
turn to integrate them as a multi-dimensional feature
pattern.

23. A method according to claim 18, wherein the
second step includes the step of capturing object
images sensed in the first step at predetermined time
intervals, computing feature pattern of the object
images of identical times, and arranging feature
patterns of different times in turn to integrate them
as a time-series feature pattern.

24. A method according to claim 16, comprising:

the first step of sensing an object image from
different positions, and inputting a plurality of
object images at different image sensing positions;

the second step of extracting feature patterns
that represent features of an object from the plurality
of object images input in the first step;

the third step of verifying the plurality of
feature patterns extracted in the second step with a
reference feature pattern which is registered in
advance; and

the fourth step of determining, when at least one
of the plurality of feature patterns extracted in the
second step matches the reference feature pattern which
is registered in advance as a result of verification of
the third step, that an object associated with that

object image is a person himself or herself.

25. A method according to claim 24, wherein the first step includes the step of inputting a plurality of object images at different image sensing positions using a plurality of image sensing means which are set in advance at a plurality of predetermined positions, and sense an object image from a plurality of different positions.

26. A method according to claim 24, wherein the second step includes:

the step of detecting feature points of an object from the input object image;

the step of setting a feature region on the basis of the detected feature points;

the step of segmenting the set feature region into a plurality of regions; and

the step of computing brightness average values in the segmented regions, and extracting a feature pattern which represents a feature of the object on the basis of the brightness average values.

27. A method according to claim 16, comprising:

the first step of sensing an object image from different positions, and inputting a plurality of object images at different image sensing positions;

the second step of determining an image sensing position of an object image to be used from the plurality of object images input in the first step upon

registration of a feature pattern;

the third step of extracting a feature pattern which represents a feature of an object from the object image determined in the second step;

5 the fourth step of registering the feature pattern extracted in the third step as a reference feature pattern associated with the object in correspondence with position information indicating the image sensing position of the corresponding object image;

10 the fifth step of selecting an object image at an image sensing position, which corresponds to the position information registered together with the feature pattern of the object to be verified registered in the fourth step, of the plurality of object images

15 input in the first step upon verification of a feature pattern;

the sixth step of extracting a feature pattern which represents a feature of the object from the object image selected in the fifth step; and

20 the seventh step of specifying an object associated with the object image by verifying the feature pattern extracted in the sixth step with the feature pattern of the object to be verified registered in the fourth step.

25 28. A method according to claim 16, wherein an object image is input at different image sensing positions by moving at least one image sensing means to

a plurality of predetermined positions and sensing an object image at respective positions.

29. A method according to claim 16, comprising:

the first step of inputting a plurality of object images at different image sensing positions using a plurality of image sensing means, respectively set in advance at a plurality of predetermined positions, for sensing an object image from a plurality of different positions;

the second step of determining a position of the image sensing means to be used of said plurality of image sensing means upon registration of a feature pattern;

the third step of extracting a feature pattern which represents a feature of an object from the object image obtained by the image sensing means determined in the second step;

the fourth step of registering the feature pattern extracted in the third step as a reference feature pattern associated with the object in correspondence with position information indicating the position of the image sensing means determined in the second step;

the fifth step of selecting the image sensing means at a position, which corresponds to the position information registered together with the feature pattern of the object in the fourth step, of said plurality of image sensing means upon verification of a

feature pattern;

the sixth step of extracting a feature pattern which represents a feature of the object from the object image obtained by the image sensing means selected in the fifth step; and

the seventh step of specifying an object associated with the object image by verifying the feature pattern extracted in the sixth step with the feature pattern of the object registered in the fourth step.

30. A method according to claim 29, wherein each of the third and sixth steps includes:

the step of detecting feature points of an object from the input object image;

the step of setting a feature region on the basis of the detected feature points;

the step of segmenting the set feature region into a plurality of regions; and

the step of computing brightness average values in the segmented regions, and extracting a feature pattern which represents a feature of the object on the basis of the brightness average values.